ABSTRACT

EFFECTS OF ROOM TEMPERATURE EXPOSURE DURATION ON DNA QUALITY IN EARPHONE SWAB EXAMINATION FOR SEX IDENTIFICATION

Identification includes fingerprint, property, medical, dental and DNA assay methods. Specimens widely used in DNA assay for identification are blood spots/bloods, semen spots, vaginal swabs, buccal swabs and bones. In addition to these specimens, the last objects often used by the perpetrators/victims can be used for identification, such as hearing aids (headsets/earphones).
During their use, earphones are attached to the outer ear skin; thus, the earwax is suspected to adhere to the device. Length of exposure is among the factors that may affect the quality of DNA. Until recently in Indonesia, the effects of room temperature exposure duration on the quality of DNA found in earphone swabs through DNA analysis have not been widely known.
The present study was of laboratory observation. Earphones which have been used were subsequently exposed to room temperature for 1, 7, 14 and 20 days.
Results showed a significant decrease in DNA levels from day 1 to day 20. Only at day 1 that samples were detectable at the amelogenin locus (X: 106bp and Y: 112bp). Additionally, at day 7 only 1 sample was detectable. In conclusion, the length of room temperature exposure had a significant effect (p <0.005) on decreasing the quality of DNA found in earphone swabs.

Keywords: Earphone swabs, DNA quality, amelogenin